

APPENDIX E

RE: U.S. Patent Application No. 08/961,956

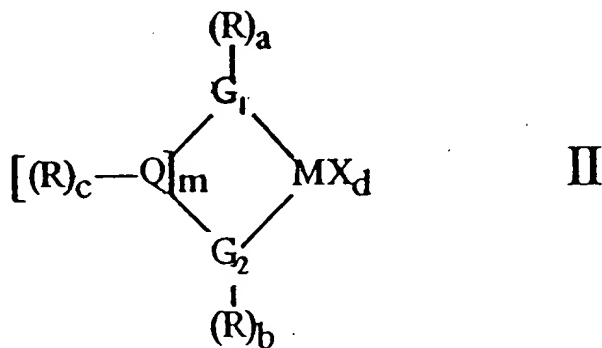
Applicant: Jose Sancho Royo, et al.

Title: "Catalytic Systems . . ."

Our Ref. No.: 616282-6/JP/B-3379

Please amend currently pending Claims 56-62, 65, 66, 69, 70, 75-80, and 84-89 as indicated below, wherein the portions being added are underlined and the portions being deleted are enclosed in braces.

Claim 56. (amended once) A catalyst for polymerization of alpha-olefins, wherein the catalyst comprises a cocatalyst and a catalyst component, wherein the catalyst component comprises a metallocene complex and a support, wherein the metallocene complex is supported on the support, wherein the metallocene complex is defined by formula I or II:



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wherein:

R groups are equal to or different from each other; each R is independently hydrogen or a radical containing from 1 to 20 carbon atoms; each R optionally contains a heteroatom selected from the group consisting of boron, germanium, tin, lead, and elements from groups {14 through} 15 and 16 of the periodic table of the elements {and boron}; at least one R group in the formula I and at least one R group in the formula II {contains} contain an OSiR''_3 group, wherein R'' is selected from the group consisting of: linear $\text{C}_1\text{-C}_{20}$ alkyl, branched $\text{C}_1\text{-C}_{20}$ alkyl, {linear} $\text{C}_3\text{-C}_{20}$ cycloalkyl, {branched $\text{C}_3\text{-C}_{20}$ cycloalkyl, linear} $\text{C}_6\text{-C}_{20}$ aryl, {branched $\text{C}_6\text{-C}_{20}$ aryl,} linear $\text{C}_7\text{-C}_{20}$ alkenyl, branched $\text{C}_7\text{-C}_{20}$ alkenyl, linear $\text{C}_7\text{-C}_{20}$ arylalkyl, branched $\text{C}_7\text{-C}_{20}$ arylalkyl, linear $\text{C}_7\text{-C}_{20}$ arylalkenyl, branched $\text{C}_7\text{-C}_{20}$ arylalkenyl, linear $\text{C}_7\text{-C}_{20}$ alkylaryl, and branched $\text{C}_7\text{-C}_{20}$ alkylaryl;

Q is selected from the group consisting of: boron and elements from groups 14 and 16 of the periodic table; when $m > 1$, Q groups are equal to or different from each other; free valences of every Q are filled with the R group or groups {according to a value of c}; two R groups optionally are bonded to form a ring having from 5 to 8 atoms, wherein the ring having from 5 to 8 atoms is directly bonded to Q; m {ranges} is an integer ranging from 1 to 4;

the G groups in the formula I are equal to or different from each other; the G groups, G_1 , and G_2 are each independently {is} a cyclic organic group bonded to M through a π bond, {G contains} a cyclopentadienyl ring that optionally is fused with one or more other rings, or {G is each independently are} an atom selected from the group consisting of elements from groups 15 and 16 of the periodic table; wherein at least one G group in the formula I is the cyclopentadienyl ring that optionally is fused with one or

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more other rings; wherein the R group that contains the OSiR"₃ group in the formula I is directly bonded to the cyclopentadienyl ring that optionally is fused with one or more other rings; wherein in the formula II, G₁ or G₂ is the cyclopentadienyl ring that optionally is fused with one or more other rings; wherein in the formula II, the R group that contains the OSiR"₃ group is directly bonded to O or to the cyclopentadienyl ring that optionally is fused with one or more other rings;

{G₁ and G₂ are equal to or different from each other; G₁ and G₂ have the same meaning as G;}

M is a metal selected from the group consisting of: elements from groups 3, 4, and 10 of the periodic table, lanthanides, and actinides;

X groups are equal to or different from each other; X is selected from the group consisting of: halogen, hydrogen, OR'', N(R'')₂, C₁-C₂₀ alkyl, and C₆-C₂₀ aryl; wherein R'' is selected from the group consisting of: linear C₁-C₂₀ alkyl, branched C₁-C₂₀ alkyl, {linear} C₃-C₂₀ cycloalkyl, {branched C₃-C₂₀ cycloalkyl, linear} C₆-C₂₀ aryl, {branched C₆-C₂₀ aryl,} linear C₇-C₂₀ alkenyl, branched C₇-C₂₀ alkenyl, linear C₇-C₂₀ arylalkyl, branched C₇-C₂₀ arylalkyl, linear C₇-C₂₀ arylalkenyl, branched C₇-C₂₀ arylalkenyl, linear C₇-C₂₀ alkylaryl, and branched C₇-C₂₀ alkylaryl;

x is an integer greater than or equal to 1 {or 2}, y is an integer greater than or equal to 2 {or 3} in such a way that x + y = 3, 4, 5, or 6;

d is an integer ranging from 0 to 2; and a, b and c are integers from 0 to 10 in such a way that a + b + c ≥ 1;

wherein the metallocene complex is supported on the support by means of a bond resulting from a reaction of the OSiR"₃ group of the metallocene complex with a reactive group on a surface of the

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support; and wherein the OSiR''_3 group is not directly bonded to Q when Q {is} contains Si.

Claim 57. (amended once) A catalyst as claimed in Claim 56 wherein in the formula I {or} and the formula II each R is independently selected from the group consisting of: hydrogen, $\{\text{SiR}'_3\}$ linear $\text{C}_1\text{-C}_{20}$ alkyl, branched $\text{C}_1\text{-C}_{20}$ alkyl, {linear} $\text{C}_3\text{-C}_{20}$ cycloalkyl, {branched $\text{C}_3\text{-C}_{20}$ cycloalkyl, linear} $\text{C}_6\text{-C}_{20}$ aryl, {branched $\text{C}_6\text{-C}_{20}$ aryl,} linear $\text{C}_7\text{-C}_{20}$ alkenyl, branched $\text{C}_7\text{-C}_{20}$ alkenyl, linear $\text{C}_7\text{-C}_{20}$ arylalkyl, branched $\text{C}_7\text{-C}_{20}$ arylalkyl, linear $\text{C}_7\text{-C}_{20}$ arylalkenyl, branched $\text{C}_7\text{-C}_{20}$ arylalkenyl, linear $\text{C}_7\text{-C}_{20}$ alkylaryl, and branched $\text{C}_7\text{-C}_{20}$ alkylaryl; {and} wherein optionally each R group contains a heteroatom selected from the group consisting of: boron, germanium, tin, lead, and elements of groups {14 through} 15 and 16 of the periodic table of the elements {and boron}; and wherein at least one R group in the formula I and at least one R group in the formula II contain the OSiR''_3 group.

Claim 58. (amended once) A catalyst as claimed in Claim 56 wherein in the formula I {or} and the formula II M is selected from the group consisting of: Ti, Zr, and Hf.

Claim 59. (amended once) A catalyst as claimed in Claim 56 wherein in the formula I {or} and the formula II the R group {containing} that contains the group $\{\text{OSiR}''\}$ OSiR''_3 is selected from the group consisting of: $-\text{CH}_2\text{-CH}_2\text{-OSiMe}_3$, $-\text{CH}_2\text{-CH}_2\text{-CH}_2\text{-OSiMe}_3$, $-\text{CH}_2\text{-O-CH}_2\text{-OSiMe}_3$, and $-\text{O-CH}_2\text{-CH}_2\text{-OSiMe}_3$ {, and $-\text{SiMe}_2\text{-CH}_2\text{-CH}_2\text{-OSiMe}_3$ }.

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Claim 60. (amended once) A catalyst as claimed in Claim 56 wherein in the formula I each G is independently cyclopentadienyl or indenyl; M is zirconium; x is 2; y is 2; each R is independently C₁-C₄ alkyl, wherein at least one hydrogen of one R is substituted with the OSiR"₃ group, wherein R" is selected from the group consisting of: Me, Et, and Pr.

Claim 61. (amended once) A catalyst as claimed in Claim 57 wherein in the formula II M is zirconium; G₁ and G₂ are each independently cyclopentadienyl or indenyl; each R is independently hydrogen{,} or a C₁-C₄ alkyl wherein at least one hydrogen of one R is substituted with the OSiR"₃ {or a SiR'₂-OSiR"₃} group, wherein R" is selected from the group consisting of: methyl, ethyl, and propyl; {[(R)_cQ]_m} and wherein if [(R)_c-Q]_m does not contain the OSiR"₃ group, then [(R)_c-Q]_m is H₂C-CH₂, CRH-CH₂, RHC-SiR'₂, R₂C-SiR'₂, {and} or SiRR', wherein R' is selected from the group consisting of linear C₁-C₂₀ alkyl, branched C₁-C₂₀ alkyl, C₃-C₂₀ cycloalkyl, C₆-C₂₀ aryl, linear C₇-C₂₀ alkenyl, branched C₇-C₂₀ alkenyl, linear C₇-C₂₀ arylalkyl, branched C₇-C₂₀ arylalkyl, linear C₇-C₂₀ arylalkenyl, branched C₇-C₂₀ arylalkenyl, linear C₇-C₂₀ alkylaryl, and branched C₇-C₂₀ alkylaryl.

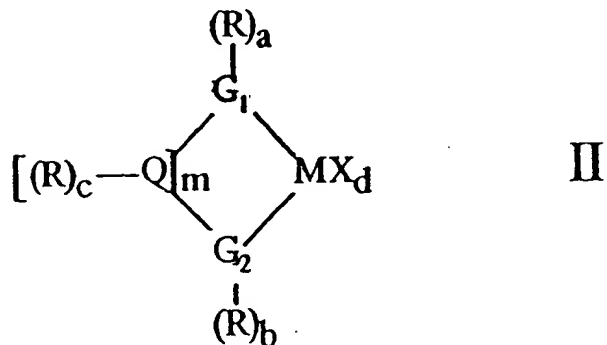
Claim 62. (Amended once) A catalyst as claimed in Claim 57 wherein in the formula II M is titanium; wherein G₂ is an oxygen or a nitrogen atom; wherein G₁ is a cyclopentadienyl, indenyl or fluorenyl ring; {[(R)_cQ]_m} and wherein if [(R)_c-Q]_m does not contain the OSiR"₃ group, then [(R)_c-Q]_m is H₂C-CH₂, CRH-CH₂, RHC-SiR'₂, R₂C-SiR'₂, {and} or SiRR', wherein R' is selected from the group

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consisting of linear C₁-C₂₀ alkyl, branched C₁-C₂₀ alkyl, C₃-C₂₀ cycloalkyl, C₆-C₂₀ aryl, linear C₇-C₂₀ alkenyl, branched C₇-C₂₀ alkenyl, linear C₇-C₂₀ arylalkyl, branched C₇-C₂₀ arylalkyl, linear C₇-C₂₀ arylalkenyl, branched C₇-C₂₀ arylalkenyl, linear C₇-C₂₀ alkylaryl, and branched C₇-C₂₀ alkylaryl.

Claim 65. (amended once) A process for preparing a catalyst as claimed in Claim 56, {wherein the catalyst comprises a cocatalyst and a catalyst component, wherein the catalyst component comprises a metallocene complex and a support, wherein the metallocene complex is supported on the support,} wherein the process comprises the following steps:

- (a) impregnation on a support, under anhydrous conditions and an inert atmosphere at a temperature between -20°C and 90°C, of a solution comprising at least one metallocene complex and a cocatalyst {on the support}, wherein the metallocene complex is defined by formula I or II



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wherein:

R groups are equal to or different from each other; each R is independently hydrogen or a radical containing from 1 to 20 carbon atoms; each R optionally contains a heteroatom selected from the group consisting of boron, germanium, tin, lead, and elements from groups {14 through} 15 and 16 of the periodic table of the elements {and boron}; at least one R group in the formula I and at least one R group in the formula II {contains} contain an OSiR''_3 group, wherein R'' is selected from the group consisting of: linear $\text{C}_1\text{-C}_{20}$ alkyl, branched $\text{C}_1\text{-C}_{20}$ alkyl, {linear} $\text{C}_3\text{-C}_{20}$ cycloalkyl, {branched $\text{C}_3\text{-C}_{20}$ cycloalkyl, linear} $\text{C}_6\text{-C}_{20}$ aryl, {branched $\text{C}_6\text{-C}_{20}$ aryl,} linear $\text{C}_7\text{-C}_{20}$ alkenyl, branched $\text{C}_7\text{-C}_{20}$ alkenyl, linear $\text{C}_7\text{-C}_{20}$ arylalkyl, branched $\text{C}_7\text{-C}_{20}$ arylalkyl, linear $\text{C}_7\text{-C}_{20}$ arylalkenyl, branched $\text{C}_7\text{-C}_{20}$ arylalkenyl, linear $\text{C}_7\text{-C}_{20}$ alkylaryl, and branched $\text{C}_7\text{-C}_{20}$ alkylaryl;

Q is selected from the group consisting of: boron and elements from groups 14 and 16 of the periodic table; when $m > 1$, Q groups are equal to or different from each other; free valences of every Q are filled with the R group or groups {according to a value of c}; two R groups optionally are bonded to form a ring having from 5 to 8 atoms, wherein the ring having from 5 to 8 atoms is directly bonded to Q; m {ranges} is an integer ranging from 1 to 4;

the G groups in the formula I are equal to or different from each other; the G groups, G_1 , and G_2 are each independently {is} a cyclic organic group bonded to M through a π bond, {G contains} a cyclopentadienyl ring that optionally is fused with one or more other rings, or {G is each independently are} an atom selected from the group consisting of elements from groups 15 and 16 of the periodic table; wherein at least one G group in the formula I is the cyclopentadienyl ring that optionally is fused with one or

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more other rings; wherein the R group that contains the OSiR"₃ group in the formula I is directly bonded to the cyclopentadienyl ring that optionally is fused with one or more other rings; wherein in the formula II, G₁ or G₂ is the cyclopentadienyl ring that optionally is fused with one or more other rings; wherein in the formula II, the R group that contains the OSiR"₃ group is directly bonded to O or to the cyclopentadienyl ring that optionally is fused with one or more other rings;

{G₁ and G₂ are equal to or different from each other; G₁ and G₂ have the same meaning as G;}

M is a metal selected from the group consisting of: elements from groups 3, 4, and 10 of the periodic table, lanthanides, and actinides;

X groups are equal to or different from each other; X is selected from the group consisting of: halogen, hydrogen, OR'', N(R'')₂, C₁-C₂₀ alkyl, and C₆-C₂₀ aryl; wherein R'' is selected from the group consisting of: linear C₁-C₂₀ alkyl, branched C₁-C₂₀ alkyl, {linear} C₃-C₂₀ cycloalkyl, {branched C₃-C₂₀ cycloalkyl, linear} C₆-C₂₀ aryl, {branched C₆-C₂₀ aryl,} linear C₇-C₂₀ alkenyl, branched C₇-C₂₀ alkenyl, linear C₇-C₂₀ arylalkyl, branched C₇-C₂₀ arylalkyl, linear C₇-C₂₀ arylalkenyl, branched C₇-C₂₀ arylalkenyl, linear C₇-C₂₀ alkylaryl, and branched C₇-C₂₀ alkylaryl;

x is an integer greater than or equal to 1 {or 2}, y is an integer greater than or equal to 2 {or 3} in such a way that x + y = 3, 4, 5, or 6;

d is an integer ranging from 0 to 2; and a, b and c are integers from 0 to 10 in such a way that a + b + c ≥ 1;

wherein the OSiR"₃ group of the metallocene complex reacts with a reactive group of the support to bond the metallocene complex to the support, thereby forming a resulting solid comprising the

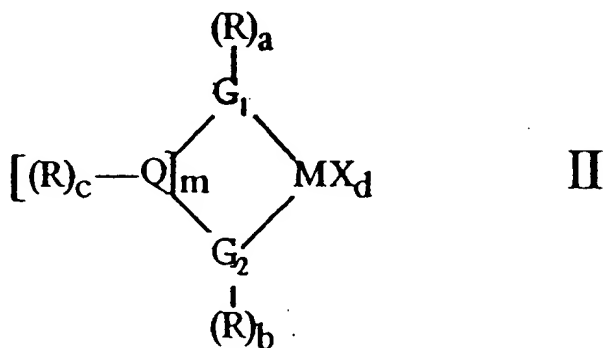
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metallocene complex and the cocatalyst supported on the support; wherein the OSiR^n_3 group is not directly bonded to Q when Q {is} contains Si; and

- (b) filtration and washing the resulting solid from step (a) with a solvent comprising an aliphatic hydrocarbon or an aromatic hydrocarbon.

Claim 66. (amended once) A process for preparing a catalyst as claimed in Claim 56, {wherein the catalyst comprises a cocatalyst and a catalyst component, wherein the catalyst component comprises a metallocene complex and a support, wherein the metallocene complex is supported on the support,} wherein the process comprises the following steps:

- (a) depositing at least one metallocene complex and a cocatalyst on {the} a support by using a solution comprising a solvent, {and} the metallocene complex, and the cocatalyst {to heterogenize}, wherein the metallocene complex is defined by formula I or II:



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wherein:

R groups are equal to or different from each other; each R is independently hydrogen or a radical containing from 1 to 20 carbon atoms; each R optionally contains a heteroatom selected from the group consisting of boron, germanium, tin, lead, and elements from groups {14 through} 15 and 16 of the periodic table of the elements {and boron}; at least one R group in the formula I and at least one R group in the formula II {contains} contain an OSiR''_3 group, wherein R'' is selected from the group consisting of: linear $\text{C}_1\text{-C}_{20}$ alkyl, branched $\text{C}_1\text{-C}_{20}$ alkyl, {linear} $\text{C}_3\text{-C}_{20}$ cycloalkyl, {branched $\text{C}_3\text{-C}_{20}$ cycloalkyl, linear} $\text{C}_6\text{-C}_{20}$ aryl, {branched $\text{C}_6\text{-C}_{20}$ aryl,} linear $\text{C}_7\text{-C}_{20}$ alkenyl, branched $\text{C}_7\text{-C}_{20}$ alkenyl, linear $\text{C}_7\text{-C}_{20}$ arylalkyl, branched $\text{C}_7\text{-C}_{20}$ arylalkyl, linear $\text{C}_7\text{-C}_{20}$ arylalkenyl, branched $\text{C}_7\text{-C}_{20}$ arylalkenyl, linear $\text{C}_7\text{-C}_{20}$ alkylaryl, and branched $\text{C}_7\text{-C}_{20}$ alkylaryl;

Q is selected from the group consisting of: boron and elements from groups 14 and 16 of the periodic table; when $m > 1$, Q groups are equal to or different from each other; free valences of every Q are filled with the R group or groups {according to a value of c }; two R groups optionally are bonded to form a ring having from 5 to 8 atoms, wherein the ring having from 5 to 8 atoms is directly bonded to Q; m {ranges} is an integer ranging from 1 to 4;

the G groups in the formula I are equal to or different from each other; the G groups, G_1 , and G_2 are each independently {is} a cyclic organic group bonded to M through a π bond, {G contains} a cyclopentadienyl ring that optionally is fused with one or more other rings, or {G is each independently are} an atom selected from the group consisting of elements from groups 15 and 16 of the periodic table; wherein at least one G group in the formula I is the cyclopentadienyl ring that optionally is fused with one or

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more other rings; wherein the R group that contains the OSiR"₃ group in the formula I is directly bonded to the cyclopentadienyl ring that optionally is fused with one or more other rings; wherein in the formula II, G₁ or G₂ is the cyclopentadienyl ring that optionally is fused with one or more other rings; wherein in the formula II, the R group that contains the OSiR"₃ group is directly bonded to O or to the cyclopentadienyl ring that optionally is fused with one or more other rings;

{G₁ and G₂ are equal to or different from each other; G₁ and G₂ have the same meaning as G;}

M is a metal selected from the group consisting of: elements from groups 3, 4, and 10 of the periodic table, lanthanides, and actinides;

X groups are equal to or different from each other; X is selected from the group consisting of: halogen, hydrogen, OR'', N(R'')₂, C₁-C₂₀ alkyl, and C₆-C₂₀ aryl; wherein R'' is selected from the group consisting of: linear C₁-C₂₀ alkyl, branched C₁-C₂₀ alkyl, {linear} C₃-C₂₀ cycloalkyl, {branched C₃-C₂₀ cycloalkyl, linear} C₆-C₂₀ aryl, {branched C₆-C₂₀ aryl,} linear C₇-C₂₀ alkenyl, branched C₇-C₂₀ alkenyl, linear C₇-C₂₀ arylalkyl, branched C₇-C₂₀ arylalkyl, linear C₇-C₂₀ arylalkenyl, branched C₇-C₂₀ arylalkenyl, linear C₇-C₂₀ alkylaryl, and branched C₇-C₂₀ alkylaryl;

x is an integer greater than or equal to 1 {or 2}, y is an integer greater than or equal to 2 {or 3} in such a way that x + y = 3, 4, 5, or 6;

d is an integer ranging from 0 to 2; and a, b and c are integers from 0 to 10 in such a way that a + b + c ≥ 1;

wherein the OSiR"₃ group of the metallocene complex reacts with a reactive group of the support to bond the metallocene complex to the support, thereby forming a resulting solid comprising the

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metallocene complex and the cocatalyst supported on the support;
wherein the OSiR"₃ group is not directly bonded to O when O
contains Si;

- (b) eliminating the solvent; and
- (c) bringing the resulting solid to a temperature between 25 and 150°C.

Claim 69. (amended once) A catalyst according to Claim 57,
wherein in the formula I {or} and the formula II M is selected
from the group consisting of: Ti, Zr, and Hf.

Claim 70. (amended once) A catalyst according to Claim 59 {58},
wherein in the formula I {or} and the formula II M is selected
from the group consisting of: Ti, Zr, and Hf.

Claim 75. (amended once) A process as claimed in Claim 65
wherein in the formula I {or} and the formula II each R is
independently selected from the group consisting of: hydrogen,
{SiR'₃,} linear C₁-C₂₀ alkyl, branched C₁-C₂₀ alkyl, {linear} C₃-C₂₀
cycloalkyl, {branched C₃-C₂₀ cycloalkyl, linear} C₆-C₂₀ aryl,
{branched C₆-C₂₀ aryl,} linear C₇-C₂₀ alkenyl, branched C₇-C₂₀
alkenyl, linear C₇-C₂₀ arylalkyl, branched C₇-C₂₀ arylalkyl, linear
C₇-C₂₀ arylalkenyl, branched C₇-C₂₀ arylalkenyl, linear C₇-C₂₀
alkylaryl, and branched C₇-C₂₀ alkylaryl; {and} wherein optionally
each R group contains a heteroatom selected from the group
consisting of: boron, germanium, tin, lead, and elements of
groups {14 through} 15 and 16 of the periodic table of the
elements {and boron}; and wherein at least one R group in the
formula I and at least one R group in the formula II contain the

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OSiR''₃ group.

Claim 76. (amended once) A process according to Claim 65 wherein in the formula I {or} and the formula II M is selected from the group consisting of: Ti, Zr, and Hf.

Claim 77. (amended once) A process according to Claim 65 wherein in the formula I {or} and the formula II the R group {containing} that contains the group {OSiR''} OSiR''₃ is selected from the group consisting of: -CH₂-CH₂-OSiMe₃, -CH₂-CH₂-CH₂-OSiMe₃, -CH₂-O-CH₂-OSiMe₃, and -O-CH₂-CH₂-OSiMe₃{, and -SiMe₂-CH₂-CH₂-OSiMe₃}.

Claim 78. (Amended once) A process according to Claim 65 wherein in the formula I each G is independently cyclopentadienyl or indenyl; M is zirconium; **x** is 2; **y** is 2; each R is independently C₁-C₄ alkyl, wherein at least one hydrogen of one R is substituted with the OSiR''₃ group, wherein R'' is selected from the group consisting of: Me, Et, and Pr.

Claim 79. (amended once) A process according to Claim 75 wherein in the formula II M is zirconium; G₁ and G₂ are each independently cyclopentadienyl or indenyl; each R is independently hydrogen{,} or a C₁-C₄ alkyl wherein at least one hydrogen of one R is substituted with the OSiR''₃ {or a SiR'₂-OSiR''₃} group, wherein R'' is selected from the group consisting of: methyl, ethyl, and

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propyl; $\{[(R)_cQ]_m\}$ and wherein if $[(R)_c-O]_m$ does not contain the $OSiR''_3$ group, then $[(R)_c-O]_m$ is H_2C-CH_2 , $CRH-CH_2$, $RHC-SiR'_2$, $R_2C-SiR'_2$, {and} or $SiRR'$, wherein R' is selected from the group consisting of linear C_1-C_{20} alkyl, branched C_1-C_{20} alkyl, C_3-C_{20} cycloalkyl, C_6-C_{20} aryl, linear C_7-C_{20} alkenyl, branched C_7-C_{20} alkenyl, linear C_7-C_{20} arylalkyl, branched C_7-C_{20} arylalkyl, linear C_7-C_{20} arylalkenyl, branched C_7-C_{20} arylalkenyl, linear C_7-C_{20} alkylaryl, and branched C_7-C_{20} alkylaryl.

Claim 80. (amended once) A process according to Claim 65 wherein in the formula II M is titanium; wherein G_2 is an oxygen or a nitrogen atom; wherein G_1 is a cyclopentadienyl, indenyl or fluorenyl ring; $\{[(R)_cQ]_m\}$ and wherein if $[(R)_c-O]_m$ does not contain the $OSiR''_3$ group, then $[(R)_c-O]_m$ is H_2C-CH_2 , $CRH-CH_2$, $RHC-SiR'_2$, $R_2C-SiR'_2$, {and} or $SiRR'$, wherein R' is selected from the group consisting of linear C_1-C_{20} alkyl, branched C_1-C_{20} alkyl, C_3-C_{20} cycloalkyl, C_6-C_{20} aryl, linear C_7-C_{20} alkenyl, branched C_7-C_{20} alkenyl, linear C_7-C_{20} arylalkyl, branched C_7-C_{20} arylalkyl, linear C_7-C_{20} arylalkenyl, branched C_7-C_{20} arylalkenyl, linear C_7-C_{20} alkylaryl, and branched C_7-C_{20} alkylaryl.

Claim 84. (amended once) A process as claimed in Claim 66 wherein in the formula I {or} and the formula II each R is independently selected from the group consisting of: hydrogen, $\{SiR'_3\}$ linear C_1-C_{20} alkyl, branched C_1-C_{20} alkyl, {linear} C_3-C_{20} cycloalkyl, {branched C_3-C_{20} cycloalkyl, linear} C_6-C_{20} aryl, {branched C_6-C_{20} aryl,} linear C_7-C_{20} alkenyl, branched C_7-C_{20}

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alkenyl, linear C₇-C₂₀ arylalkyl, branched C₇-C₂₀ arylalkyl, linear C₇-C₂₀ arylalkenyl, branched C₇-C₂₀ arylalkenyl, linear C₇-C₂₀ alkylaryl, and branched C₇-C₂₀ alkylaryl; {and} wherein optionally each R group contains a heteroatom selected from the group consisting of: boron, germanium, tin, lead, and elements of groups {14 through} 15 and 16 of the periodic table of the elements {and boron}; wherein at least one R group in the formula I and at least one R group in the formula II contain the OSiR"₃ group.

Claim 85. (amended once) A process according to Claim 66 wherein in the formula I {or} and the formula II M is selected from the group consisting of: Ti, Zr, and Hf.

Claim 86. (amended once) A process according to Claim 66 wherein in the formula I {or} and the formula II the R group {containing} that contains the group {OSiR"} OSiR"₃ is selected from the group consisting of: -CH₂-CH₂-OSiMe₃, -CH₂-CH₂-CH₂-OSiMe₃, -CH₂-O-CH₂-OSiMe₃, and -O-CH₂-CH₂-OSiMe₃{, and -SiMe₂-CH₂-CH₂-OSiMe₃}.

Claim 87. (Amended once) A process according to Claim 66 wherein in the formula I each G is independently cyclopentadienyl or indenyl; M is zirconium; x is 2; y is 2; each R is independently C₁-C₄ alkyl, wherein at least one hydrogen of one R is substituted with the OSiR"₃ group, wherein R" is selected from the group consisting of: Me, Et, and Pr.

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Claim 88. (amended once) A process according to Claim 84 wherein in the formula II M is zirconium; G_1 and G_2 are each independently cyclopentadienyl or indenyl; each R is independently hydrogen{,} or a C_1 - C_4 alkyl wherein at least one hydrogen of one R is substituted with the $OSiR''_3$ {or a SiR'_2 - $OSiR''_3$ } group, wherein R'' is selected from the group consisting of: methyl, ethyl, and propyl; $\{(R)_cQ\}_m$ and wherein if $[(R)_c-O]_m$ does not contain the $OSiR''_3$ group, then $[(R)_c-O]_m$ is H_2C-CH_2 , $CRH-CH_2$, $RHC-SiR'_2$, $R_2C-SiR'_2$, {and} or $SiRR'$, wherein R' is selected from the group consisting of linear C_1 - C_{20} alkyl, branched C_1 - C_{20} alkyl, C_3 - C_{20} cycloalkyl, C_6 - C_{20} aryl, linear C_7 - C_{20} alkenyl, branched C_7 - C_{20} alkenyl, linear C_7 - C_{20} arylalkyl, branched C_7 - C_{20} arylalkyl, linear C_7 - C_{20} arylalkenyl, branched C_7 - C_{20} arylalkenyl, linear C_7 - C_{20} alkylaryl, and branched C_7 - C_{20} alkylaryl.

Claim 89. (amended once) A process according to Claim 66 wherein in the formula II M is titanium; wherein G_2 is an oxygen or a nitrogen atom; wherein G_1 is a cyclopentadienyl, indenyl or fluorenyl ring; $\{(R)_cQ\}_m$ and wherein if $[(R)_c-O]_m$ does not contain the $OSiR''_3$ group, then $[(R)_c-O]_m$ is H_2C-CH_2 , $CRH-CH_2$, $RHC-SiR'_2$, $R_2C-SiR'_2$, {and} or $SiRR'$, wherein R' is selected from the group consisting of linear C_1 - C_{20} alkyl, branched C_1 - C_{20} alkyl, C_3 - C_{20} cycloalkyl, C_6 - C_{20} aryl, linear C_7 - C_{20} alkenyl, branched C_7 - C_{20} alkenyl, linear C_7 - C_{20} arylalkyl, branched C_7 - C_{20} arylalkyl, linear C_7 - C_{20} arylalkenyl, branched C_7 - C_{20} arylalkenyl, linear C_7 - C_{20} alkylaryl, and branched C_7 - C_{20} alkylaryl.